MTH105 Fundamentals of Mathematics

Level: 1

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

Synopsis:

MTH105 Fundamentals of Mathematics will introduce students to the language, notions and methods upon which a sound education in mathematics at the university level is built. Students will be exposed to the language of mathematical logic, the idea of rigorous mathematical proofs and fundamental mathematical concepts such as sets, relations and functions.

Topics:

- Predicates
- Quantified Statements
- Direct Proof
- Counterexamples
- Contradiction and Contraposition
- Algorithms
- Sets
- Set Theoretic Operations
- Mathematical Induction
- Relations
- Equivalence Relations
- Functions

Textbooks:

Susanna S. Epp: Discrete Mathematics with Applications 5th Cengage
ISBN-13: 9780357121467

Learning Outcome:

- Show certain mathematical statements by rigorous mathematical arguments.
- Give counterexamples to disprove certain mathematical statements.
- Use mathematical induction or well ordering principle to prove mathematical statements.
- Describe equivalence classes of a given equivalence relation.
- Employ truth tables to determine whether given arguments are valid.
- Determine whether given functions are injective and/or surjective.

Assessment Strategies (Evening Class):

Components	**Description**	**Weightage Allocation (%)**
Overall Continuous Assessment	COMPUTER MARKED ASSIGNMENT 1	10
	TUTOR-MARKED ASSIGNMENT 1	20
Overall Examinable Components	Written Exam	70
Total		**100**